

the annular blade can be translatable by actuation of the trigger **210** which advances the fasteners, or alternatively by a separate actuator actuated in a separate step. The annular blade comes into contact with fastener retaining frame **24** and is pressed against the plurality of perforations **26** defined in the fastener retaining frame **24** severing or breaking perforations **26**. The broken or severed perforations **26** enable the mated surgical fastener **32** and fastener retaining frame **24** to be detached from anvil **22**. The severing or breaking off of perforations **26** leaves a residuary ring, i.e., the inner part of second annular portion **24b** of fastener retaining frame **24**, within ledge **18a** of annular recess **18** of flange member **16**. In some embodiments, in order to prevent perforation chips that may be produced during the severing or breaking off of perforations **26**, each of the plurality of perforations **26** may be provided with, for example, a pair of opposing slits or a notched portion, as mentioned above, wherein the thickness of the annular blade is chosen to be smaller than, e.g., the width of the pair of opposing slits. The mated surgical fastener **32** and fastener retaining frame **24** fastening body tissue therebetween would then be free to displace without being restricted or attached to anvil **22**. Actuation of the knife severs the tissue. The operator then moves anvil **22** to the open (unapproximated) position by rotating the rotatable knob **220** of the handle assembly thereby distally translating anvil assembly **20**. After the removal of the severed tissue, e.g. hemorrhoidal tissue, the surgical fastening device is removed from the body.

From the foregoing and with reference to the various figure drawings, those skilled in the art will appreciate that certain modifications can also be made to the present disclosure without departing from the scope of the same. For example, the annular blade may be fixedly secured to the anvil and configured to break the plurality of perforations on the fastener retaining frame upon firing of the plurality of fasteners. Such design eliminates the need for a longitudinal translation of the annular blade. Additionally, although disclosed as annular portions for use with a circular fastening apparatus, use of linear portions for use with apparatus applying linear arrays of fasteners are also contemplated.

While several embodiments of the disclosure have been shown in the drawings and/or discussed herein, it is not intended that the disclosure be limited thereto, as it is intended that the disclosure be as broad in scope as the art will allow and that the specification be read likewise. Therefore, the above description should not be construed as limiting, but merely as exemplifications of particular embodiments. Those skilled in the art will envision other modifications within the scope and spirit of the claims appended hereto.

What is claimed is:

1. An end effector of a surgical instrument comprising:
 - a tubular body including a plurality of surgical fasteners therein;
 - an anvil movable relative to the tubular body between an open position and an approximated position;
 - a fastener retaining frame including a first annular portion having a weakened portion and a second annular portion having a plurality of retainers configured to mate with the plurality of surgical fasteners to retain tissue therebetween; and
 - a flange secured with the anvil, the flange defining a circular recess configured to receive a portion of the first annular portion therein, the flange including a circular ledge extending radially over the portion of the first annular portion to secure the portion of the first annular portion within the circular recess of the flange, wherein the weakened portion is severable from the plurality of

retainers, whereby the plurality of the retainers is detachable from the anvil and the portion of the first annular portion is retained within the circular recess of the flange.

2. The end effector of the surgical instrument according to claim 1, wherein the plurality of retainers is circumferentially arranged on the second annular portion of the fastener retaining frame.

3. The end effector of the surgical instrument according to claim 2, wherein the weakened portion is circumferentially arranged in the first annular portion of the fastener retaining frame.

4. The end effector of the surgical instrument according to claim 3, wherein the first and second annular portions are concentrically arranged.

5. The end effector of the surgical instrument according to claim 3, wherein the first annular portion is disposed within the second annular portion.

6. The end effector of the surgical instrument according to claim 1, wherein the plurality of retainers is monolithically formed.

7. The end effector of the surgical instrument according to claim 1, wherein the plurality of retainers is arranged circumferentially on the fastener retaining frame to define two concentric rings of retainers.

8. The end effector of the surgical instrument according to claim 7, wherein the weakened portion is disposed radially inward of the two concentric rings of retainers.

9. The end effector of the surgical instrument according to claim 1, wherein each retainer of the plurality of retainers defines a pair of cavities configured to receive prongs of the respective surgical fasteners.

10. The end effector of the surgical instrument according to claim 9, wherein each cavity includes a notch, and each prong includes a protrusion configured to engage the notch.

11. The end effector of the surgical instrument according to claim 1, wherein the weakened portion defines a plurality of perforations formed therein.

12. The end effector of the surgical instrument according to claim 1, wherein the tubular body further includes an annular pusher for ejecting the plurality of surgical fasteners toward the respective retainers.

13. The end effector of the surgical instrument according to claim 1, wherein the tubular body further includes an annular blade for severing the weakened portion of the fastener retaining frame to detach the plurality of retainers of the fastener retaining frame from the anvil.

14. The end effector of a surgical instrument according to claim 1, wherein the circular ledge extends radially outward from an inner-most portion of the flange.

15. A method of fastening tissue comprising:

- providing an end effector of a surgical instrument including:
 - a tubular body;
 - an anvil;
 - a fastener retaining frame including a plurality of retainers configured to mate with respective surgical fasteners, and a weakened portion; and
 - a flange secured with the anvil, the flange defining a circular recess configured to receive a portion of the fastener retaining frame, the flange including a circular ledge extending radially over the portion of the fastener retaining frame to secure the portion of the fastener retaining frame within the circular recess of the flange;
- positioning tissue between the tubular body and the anvil;
- applying the surgical fasteners through the tissue; and